

CANINE DILATED CARDIOMYOPATHY

About Canine Heart Disease

Dilated cardiomyopathy (DCM) is a very common form of cardiac (heart) disease in dogs. In DCM, the heart muscle becomes thin and floppy and is unable to contract properly leading to a smaller volume of blood being pumped out the heart to the rest of the body. Initially, the body is able to compensate for the decreased cardiac output of blood by increasing the heart rate and retaining sodium to increase blood volume. But eventually, as the myopathy (heart muscle disease) progresses, the heart itself enlarges and the heart valves start to leak. When this occurs, a heart murmur is heard with each heart contraction. DCM is a progressive disease which worsens over time eventually throwing the dog into congestive heart failure. Almost 90% of DCM occurs in Doberman Pinchers, Boxers, Giant breeds including Great Danes, Borzois, and Wolf Hounds, and Cocker Spaniels.

Symptoms of Heart Disease

- Soft non-productive cough- usually worse at night
- Exercise intolerance & shortness of breath
- Weight gain or loss
- In heart failure- labored breathing / wheezing
- Swelling of abdomen
- Weakness & eventual collapse
- Shock with purple or blue tinged gums

Diagnosis

- **On physical exam**, the veterinarian will carefully listen to the heart with a stethoscope to listen for heart murmurs, muffled heart sounds, and irregular beats and rhythms. The pulses are felt at the same time to identify pulse deficits- when a heart beat is heard but there is no associated pulse.
- **Pulse strength and quality** is assessed as well.
- **In congestive heart failure**, and a dog will have labored breathing, a high heart rate, and weak pulses. If the dog has left sided heart failure, fluid crackles can be heard in the lung fields indicating pulmonary edema. With right sided heart failure, fluid builds up in the space around the lungs which makes it difficult for the lungs to expand with each breath. The build up of fluid is termed pleural effusion. Many dogs present with both pleural effusion and pulmonary edema indicating biventricular or left and right sided heart failure.
- **Radiographs (X-rays)** are used to evaluate the heart shape and size. In DCM, often a very large heart is seen. The lung fields are often clear unless the dog is in heart failure where fluid densities can be seen in and around the lung fields.
- **ECG or electrocardiogram** traces out the heart's electrical activity and is used to assess rate, rhythm, and heart enlargement based on the shape and size of different parts of the electrical complex.

- **A flat line ECG** (often seen in the movies) indicates no electrical activity in the heart which equals death.
- **Echocardiogram (echo)** is the technical name for an ultrasound of the heart.
- **An "echo" is the ultimate diagnostic tool for diagnosing & evaluating heart disease.** Ultrasounds are used to look at the actual function of the heart and to measure the size of the heart chambers, thickness of the walls, valves, and major vessels. Additionally, blood volume and direction of flow can be evaluated via doppler probe- which allows the cardiologist to measure cardiac output (blood volume pumped through the heart) and evaluate the severity of murmurs. With an echocardiogram, the cardiologist can accurately assess the degree of heart disease, give a more accurate prognosis, and most importantly choose the appropriate medication (s) for each animal. (see about echos in the cardiology page)

Treatment

There is a wide variety of heart medications available (most of which are used to treat disease in humans), and treatment is based on the individual animal. Most dogs with DCM are placed on digoxin- a drug used to slow heart rate, and increase the ability of the heart muscle to contract normally. Beta blocking drugs are added to further decrease heart rate and allow for a stronger contraction. Sometimes ACE inhibitors such as enalapril are used. Lasix® or furosemide is a common diuretic used to help decrease the buildup on fluid in and around the lungs, and eliminate extra sodium in the urine. Many other drugs can be used, most on a temporary basis, to improve cardiac function.

Prognosis

Entirely dependent upon each individual but generally guarded to poor prognosis for long term survival.

**With early diagnosis and proper therapy, a dog can do well for some time with the disease.